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## Economic Impact of e-Velanmai Model of Extension Service

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### ABSTRACT

*A study was carried out to assess the impact of e-Velanmai project, which is an ICT (Information and Communication Technology) enabled extension service implemented by Tamil Nadu Agricultural University, in three districts viz., Coimbatore, Tirupur and Villupuram of Tamil Nadu state, with 180 farmer respondents (90 e-Velanmai beneficiaries and 90 non-beneficiaries). Partial budgeting analysis revealed that with respect to yield, it is noticed that the yield value of beneficiaries was higher than that of the non-beneficiaries. As a result the net-gain for the beneficiaries was Rs. 28,481 per acre. With respect to the constraints faced by beneficiaries, an overwhelming percentage (94.40 %) of the beneficiary respondents had expressed that they faced no constraints, while a small percentage (5.50 %) indicated that there is no direct contact with TNAU Scientists', and no follow-up visit by Field Coordinators after giving advice (1.10 %)*

e-Velanmai means 'Electronic Agriculture'. It is a World Bank sponsored project which was operated by the Tamil Nadu Agricultural University (TNAU) from July 2007 to March 2013. e-Velanmai is a combination of personal and ICT based, demand driven and participatory technology transfer model in agriculture to provide timely agro advisory services by a multidisciplinary team of agricultural scientists to farmers using ICT tools (Digital Camera, Computer, Internet, Mobile Phone, etc.) through a Field Coordinator (FC) on need basis (Karthikeyan, 2012). It is a sustainable approach of technology transfer for enabling scientific farming and thereby enhancing farm productivity.

e-Velanmai was planned to be a sustainable

approach of technology transfer for enabling scientific farming. Therefore, e-Velanmai was implemented as a paid model of extension service. Being a new ICT venture, it was expected that it would evoke different kinds of responses from among the beneficiaries. Totally, 10,507 farmers, of which 1,076 were farm women, were enrolled as members in the project by paying a nominal fee of Rupees (Rs.) 50/- per farmer with upto five acres of land, Rs. 100/- for those with 5.1 to 10 acres, and Rs. 150/- for those with land holding of above 10 acres. During the project period based on demand advices were given to the members to solve their farm problems and to take informed decisions. In the light of the above it was decided to assess the process impact of e-Velanmai project among the beneficiaries.

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The objectives of the study were as follows:

- To assess the impact of e-Velanmai model of extension among the beneficiaries.
- To find out the constraints experienced by e-Velanmai beneficiaries.

## METHODOLOGY

The e-Velanmai project was implemented in three districts of Tamil Nadu viz., Coimbatore (Aliyar sub-basin), Tirupur (Palar sub-basin) and Villupuram (Varahanadhi sub-basin), and therefore the study was carried out in all these three districts. The respondents of the study were registered members (beneficiaries) of e-Velanmai project and those farmers who did not register in the e-Velanmai project (non-beneficiaries). Based on probability proportionate sampling method, 30 beneficiary respondents were selected from two Water User Associations (WUAs) in Aliyar sub-basin; 30 respondents from three WUAs in Palar sub-basin; and 30 respondents from three WUAs in Varahanadhi sun-basin and thus the total sample size of the beneficiaries was 90. Non-beneficiary respondents were selected from the same WUAs of the three sub-basins viz., Palar, Aliyar and Varahanadhi, as it was considered in line with sound sampling procedure. The criterion that was followed to select a non-beneficiary respondent from each village of a WUA was 'closest physical proximity' to the selected e-Velanmai beneficiary respondent's farm. This was uniformly followed for selecting all the 90 non-beneficiary respondents that were included in

the study.

The impact of e-Velanmai project was assessed by employing Partial Budgeting technique.

Partial budgeting is a statement of anticipated changes in costs, returns and profitability for minor modification (Reddy *et al.*, 2010).

When a farmer contemplates few modifications or minor changes in the existing organization of his farm business, partial budgeting technique is employed. It is similar to that of marginal analysis, wherein changes in costs and returns resulting from proposed modifications are alone considered. It consists of four important elements viz., added costs, added returns, reduced returns and reduced costs. Partial budgeting technique is generally used to evaluate the profitability of input substitution, enterprise substitution and scale of operation.

- 1. Added Costs:** Additional costs are incurred, if the proposed modification is the introduction of a new enterprise or increase in the size of the existing enterprise.
- 2. Added Returns:** Additional returns could be received when the proposed modification is the addition of a new enterprise, or increase in the size of the existing enterprise or adoption of technology that results in higher productivity.
- 3. Reduced Returns:** Decrease in the returns is observed when the proposed

modification involves the elimination of an existing enterprise or reduction in the size of the existing enterprise.

- 4. Reduced Costs:** Decrease in the costs is found when the proposed modification involves the elimination of existing enterprise or reduction in the size of the enterprise or adoption of a technology that using fewer amounts of resources.

Based on the above four parameters a schedule was developed and data was collected.

From the collected data, the added costs,

added returns, reduced costs and reduced returns were calculated. The results of the partial budgeting may either be net loss or net gain. The formula used is as follows:

$$\text{Partial Budget} = (\text{Added Returns} + \text{Reduced Costs}) - (\text{Reduced Returns} + \text{Added Costs})$$

## FINDINGS AND DISCUSSION

The results and discussion are presented as follows:

### Partial Budgeting

The results of partial budgeting analysis are presented in Tables 1 and 2.

**Table 1.**  
**Expenditure on Major Practices / Activities for Beneficiary and Non-beneficiary Respondents**

Sl.No.	Parameters / Practices	Non-beneficiaries (Rs. / ac)	e-Velanmai beneficiaries (Rs. / ac)
1.	Information Cost	25.00	3.00
2.	Fertilization	7,290.00	6,802.00
3.	Irrigation	1,375.00	1,120.00
4.	Weeding	13,100.00	11,250.00
5.	Pest Management	860.00	645.00
6.	Disease Management	975.00	940.00
7.	Inter-Cultural Activities	4,800.00	4,500.00
8.	Farm Income	3,30,107.00	3,55,423.00

It is inferred from Table 1 that there was reduced cost (information costs, fertilization, irrigation, weeding, pest management, disease management, inter-cultural activities) to the tune of Rs. 3,165 / - per acre. An added returns of Rs. 25,316 / - per acre was obtained

from farm income and there was no reduced returns at all. The net gain was found to be Rs. 28,481 / - per acre. It is therefore concluded that e-Velanmai had led to an increase in the farm income for the beneficiaries.

**Table 2.**  
**Results of Partial Budgeting Analysis**

Sl.No.	Debit (A)	Value (Rs. / ac)	Credit (B)	Value (Rs. / ac)
1.	<b>Added Costs</b>		<b>Reduced Costs</b>	
	-	Nil.	Information Cost	22.00
			Fertilization	448.00
			Irrigation	255.00
			Weeding	1,850.00
			Pest Management	215.00
			Disease Management	35.00
			Inter-cultural Activities	300.00
			<b>Total</b>	3,165.00
2.	<b>Reduced Returns</b>		<b>Added Returns</b>	
	-	Nil.	Yield	25,316.00
	<b>Total</b>	-	<b>Total</b>	28,481.00
			<b>Net Gain = (B – A)</b>	<b>28,481.00</b>

It is seen from Table 2 that the expenditure incurred by the non-beneficiary respondents with respect to the parameters / practices viz., information cost, fertilization, irrigation, weeding, pest management, disease management, and inter-cultural activities,

was higher than that of the e-Velanmai beneficiaries. In addition, with respect to yield it is noticed that the yield value of beneficiaries was higher than that of the non-beneficiaries. As a result the net-gain for the beneficiaries was Rs. 28,481 per acre.

**Table 3.**  
**Distribution of Beneficiary Respondents according to Constraints Faced while availing Extension Services under e-Velanmai**

Sl.No.	Constraints	Beneficiaries	
		No. (n=90)	Per cent*
1.	No constraints	85	94.40
2.	No direct contact with TNAU Scientists	5	5.50
3.	No follow-up visit by Field Coordinators after giving advice	1	1.10

\* Multiple Responses.

### **Constraints faced by the beneficiaries while availing extension services under e-Velanmai**

The distribution of beneficiary respondents according to the constraints faced while availing extension services under e-Velanmai is presented in Table 3.

It is seen from Table 3 that an overwhelming percentage (94.40 %) of the beneficiary respondents had expressed that they faced no constraints while availing services under e-Velanmai project. A meager percentage (5.50 %) indicated that there is no direct contact with TNAU Scientists and no follow-up visit by Field Coordinators after giving advice (1.10 %).

### **CONCLUSION**

It is understood from the input assessment study that the economic impact of the beneficiaries due to their participation in e-Velanmai project was found to be Rs. 28,481 / - per acre as compared to other farmers who did not avail e-Velanmai advisory services.

Most of the technologies recommended by TNAU to the farmers are scale-neutral and therefore less expensive. However, farmers who are not aware of the recommendations are likely to incur higher expenditure due to indiscriminate usage. This would have resulted in higher expenditure on the different practices / parameters whereas, in the case of beneficiaries, they would have adopted the exact recommendations of the TNAU scientists, which would have resulted in less expenditure. This may be one of the reasons for higher net gain for the beneficiaries. Moreover, the yield value was also higher for the beneficiaries, which again may be due to their participation in e-Velanmai and the meticulous adoption of the recommendations.

### **REFERENCES**

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